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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/809,764
Filing Date: March 25, 2004
Appellant(s): RICHARDS ET AL.

Julie W. Meder
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 11, 2008 appealing from the Office action mailed February 13, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,320,048	HARMUTH	3-1982
4,973,439	CHANG et al.	11-1990
4,684,488	RUDOLPH	8-1987
4,919,872	FINTEL	4-1990
6,638,353	RATHSCHLAG et al.	10-2003
6,537,364	DIETZ et al.	3-2003
2003/0125417	VANIER et al.	7-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 3-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of Chang et al. (US 4,973,439).

Regarding claims 1, 3 and 6, Harmuth teaches a method of forming pigmented powder coatings wherein a major portion of the non-pigmented constituents, such as resin binders and curing agents (col. 2, lines 51-68), are fed to an extruder and wherein the pigment dispersions, the balance of the non-pigment constituents and a volatile dispersing liquid are introduced downstream of the major portion of the non-pigmented constituents (col. 1, line 55-col. 2, line 50). Subsequently, the blended constituents are urged to another zone within the extruder, devolatilized, and then upon exiting the extruder, the extrudate is cooled, broken into chips, and ground into a fine powder (col. 5, lines 1-22; col. 6, lines 16-32). As disclosed in the instant specification, pigments are considered to be "hard to incorporate additives".

Harmuth meters the pigment dispersion into the extruder (col. 1, line 5-col. 2, line 50; col. 5, line 18-21). The metering of the pigment dispersion into the extruder as disclosed by

Harmuth suggests and implies the liquid is injected. However, additionally, Chang et al. teach a method of introducing liquid mixture into an extruder wherein the liquid is injected (Figures 1 and 2).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have metered the pigment dispersion disclosed in the method of Harmuth by injecting the pigment dispersion and liquid material as suggested by Chang et al., since Chang et al. suggests injection is an art recognized equivalent means for introducing liquids into an extruder.

Further it is submitted that the pigment dispersion employed by Harmuth is implicitly fed from some vessel and that this vessel is reasonably understood to be a low-pressure vessel. It is also implicit that the pressure vessel is connected to a source of pressurization, such as atmospheric air or a nitrogen source, in order to effectively feed the metering device (i.e. net positive suction head to the pump). Further still, the pressure vessel would have implicitly and routinely contained a mechanism, such as a relief valve, rupture disk and/or a vacuum relief, for maintaining the pressure in the vessel to a desired value to ensure the vessel does not collapse or burst. The examiner notes that one having ordinary skill would have been motivated to control the pressure as low as possible for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor emissions while ensuring the metering device was adequately fed and would have been motivated to employ a mechanism as claimed to prevent the vessel from collapsing or bursting.

As to claims 4 and 9, Harmuth discloses other additives, such as flow control additives, may be employed (col. 3, lines 30-37; col. 1 lines 55-68).

As to claim 5, the combination teaches the method as set forth above. Harmuth also discloses forming powdered coating compositions, plural (col. 1, lines 6-11), determining a

suitable pigment-binder/resin ratio (col. 1, lines 55-60), and further discloses examples of suitable pigments (col. 3, lines 25-30), and exemplifies a control sample and an inventive sample employing the same base material (col. 5, lines 26-col. 6, lines 42). Harmuth does not expressly teach repeating the steps as claimed. However, the suggestion and implication of Harmuth as outlined above is that various thermosetting powder coatings may be formed as desired to produce a variety of viable products of varying colors, as is routinely practiced in the art.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have repeated the steps as claimed while practicing the method of Harmuth to produce a variety of powder coating compositions having different colors with the same base material.

As to claim 7, Harmuth discloses the pigments are similar to those used in conventional coatings and exemplifies the formation of one suitable liquid pigment dispersion (col. 4, lines 3-34).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of Chang et al. (US 4,973,439), as applied to claims 1, 3-7, and 9 above, in view of either of Rudolph (US 4,684,488) or Fintel (US 4,919,872).

As to claim 2, the combination teaches the method as set forth above. Harmuth does not expressly teach the claimed monitoring and control steps. However, each of Rudolph (Abstract; Figure 1; col. 1, line 8-col. 2, line 8; col. 3, lines 1-24); and Fintel (Figure 2; Figure 4; col. 1, lines 11-23; col. 4, lines 3-48) individually teach processes for controlling the color of extruded materials.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the color control teachings found in either of Rudolph or Fintel with the method of Harmuth, for the purpose of providing a high quality powder coating material having the desired color while reducing production waste and costs.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of Chang et al. (US 4,973,439), as applied to claims 1, 3-7, and 9 above, and further in view of either of Rathschlag et al. (US 6,638,353) or Dietz et al. (US 6,537,364).

As to claims 7 and 8, the combination teaches the method as set forth above wherein a suitable pigment is added to an extruder with a volatile dispersing liquid and thereby teaches a liquid pigment dispersion in one reasonable interpretation of the claim. Alternatively, Rathschlag et al. (Abstract; col. 1, lines 9-22; col. 2, lines 25-68; col. 4, lines 5-11; col. 6, lines 42-col. 7, lines 63; col. 8, lines 24-43) and Dietz et al. (Abstract; col. 1, lines 39-48; col. 8, lines 15-68; col. 10, lines 12-14) disclose small particle size pigments suitable for employment in powder coating applications that are formed from liquids, optionally dried, and then used as pigments in processes for forming powdered coatings.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed the pigments disclosed by either of Rathschlag et al. or Dietz et al. in the method of Harmuth since Rathschlag et al. teach their pigment is non-dusting (Abstract) and Dietz et al. suggest their pigments have reduced levels of foreign contamination and a narrow size distribution (col. 1, lines 39-46).

Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of either of Vanier et al. (US 2003/0125417) or Dietz et al. (US 6,537,364).

Regarding claim 13, Harmuth teaches a method of forming pigmented powder coatings wherein a major portion of the non-pigmented constituents, such as resin binders and curing agents (col. 2, lines 51-68), are fed to an extruder and wherein the pigment dispersions, the balance of the non-pigment constituents and a volatile dispersing liquid are introduced downstream of the major portion of the non-pigmented constituents (col. 1, line 55-col. 2, lines 50). Subsequently, the blended constituents are urged to another zone within the extruder, devolatilized, and then upon exiting the extruder, the extrudate is cooled, broken into chips, and ground into a fine powder (col. 5, lines 1-22; col. 6, lines 16-32). Harmuth does not expressly teach the pigment is a "hyperdispersed pigment".

However, each of Vanier et al. (paragraphs [0003-0008; 0021-0022; 0027-0028]) and Dietz et al. (Abstract; col. 1, lines 39-48; col. 8, lines 15-68; col. 10, lines 12-14) disclose pigments suitable and desirable for powder coating applications that meet the "hyperdispersed" limitation in the claim.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed the pigments disclosed by either of Vanier et al. or Dietz et al. in the method of Harmuth since Vanier et al. teach their colorants yield desired visible colors (paragraph [0021] having a desired absorbance in the visible light spectrum (paragraph [0007]) and Dietz et al. suggest their pigments have reduced levels of foreign contamination and a narrow size distribution (col. 1, lines 39-46).

As to claim 15, Harmuth teaches the method as set forth above. Harmuth also discloses forming powdered coating compositions, plural (col. 1, lines 6-11), determining a suitable

pigment-binder/resin ratio (col. 1, lines 55-60), and discloses examples of suitable pigments (col. 3, lines 25-30), and exemplifies a control sample and an inventive sample employing the same base material (col. 5, lines 26-col. 6, lines 42). Harmuth does not expressly teach repeating the steps as claimed. However, the suggestion and implication of Harmuth as outlined above is that various thermosetting powder coatings may be formed as desired to produce a variety of viable products of varying colors as is routinely practiced in the art.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have repeated the steps as claimed while practicing the method of Harmuth to produce a variety of powder coating compositions having different colors with the same base material.

Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of either of Vanier et al. (US 20030125417) or Dietz et al. (US 6,537,364), as applied to claims 13 and 15 above, and further in view of either of Rudolph (US 4,684,488) or Fintel (US 4,919,872).

As to claim 14, Harmuth teaches the method as set forth above. Harmuth does not expressly teach the claimed monitoring and control steps. However, each of Rudolph (Abstract; Figure 1; col. 1, line 8-col. 2, line 8; col. 3, lines 1-24); and Fintel (Figure 2; Figure 4; col. 1, lines 11-23; col. 4, lines 3-48) individually teach processes for controlling the color of extruded materials.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the color control teachings found in either of Rudolph or Fintel with the method of Harmuth, for the purpose of providing a high quality powder coating material having the desired color while reducing production waste and costs.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of either of Vanier et al. (US 20030125417) or Dietz et al. (US 6,537,364), as applied to claims 13 and 15 above, and further in view of Chang et al. (US 4,973,439).

As to claims 21 and 22, Harmuth meters the pigment dispersion into the extruder (col. 1, line 5-col. 2, line 50; col. 5, line 18-21). The metering of the pigment dispersion into the extruder as disclosed by Harmuth suggests and implies the liquid is injected. However, additionally, Chang et al. teach a method of introducing liquid mixture into an extruder wherein the liquid is injected (Figures 1 and 2).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have metered the pigment dispersion disclosed in the method of Harmuth by injecting the pigment dispersion and liquid material as suggested by Chang et al., since Chang et al. suggests injection is an art recognized equivalent means for introducing liquids into an extruder.

Further it is submitted that the pigment dispersion employed by Harmuth is implicitly fed from some vessel and that this vessel is reasonably understood to be a low-pressure vessel. It is also implicit that the pressure vessel is connected to a source of pressurization, such as atmospheric air or a nitrogen source, in order to effectively feed the metering device (i.e. net positive suction head to the pump). Further still, the pressure vessel would have implicitly and routinely contained a mechanism, such as a relief valve, rupture disk and/or a vacuum relief, for maintaining the pressure in the vessel to a desired value to ensure the vessel does not collapse or burst. The examiner notes that one having ordinary skill would have been motivated to control the pressure as low as possible for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor

emissions while ensuring the metering device was adequately fed and would have been motivated to employ a mechanism as claimed to prevent the vessel from collapsing or bursting. Furthermore, it is the examiner's position that any of the claimed structural limitations not implicit or intrinsic within the Harmuth reference do not affect the step-wise completion of the process in a manipulative sense.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of either of Vanier et al. (US 2003/0125417) or Dietz et al. (US 6,537,364), and in view of either of Rudolph (US 4,684,488) or Fintel (US 4,919,872).

Regarding claim 17, Harmuth teaches a method of forming pigmented powder coatings wherein a major portion of the non-pigmented constituents, such as resin binders and curing agents (col. 2, lines 51-68), are fed to an extruder and wherein the pigment dispersions, the balance of the non-pigment constituents and a volatile dispersing liquid are introduced downstream of the major portion of the non-pigmented constituents (col. 1, line 55-col. 2, lines 50). Subsequently, the blended constituents are urged to another zone within the extruder, devolatilized, and then upon exiting the extruder, the extrudate is cooled, broken into chips, and ground into a fine powder (col. 5, lines 1-22; col. 6, lines 16-32). Harmuth does not expressly teach the pigment is a "hyperdispersed pigment" nor does Harmuth expressly teach the claimed monitoring and control steps.

However, each of Vanier et al. (paragraphs [0003-0008; 0021-0022; 0027-0028]) and Dietz et al. (Abstract; col. 1, lines 39-48; col. 8, lines 15-68; col. 10, lines 12-14) disclose pigments suitable and desirable for powder coating applications that meet the "hyperdispersed" limitation in the claim. Furthermore, each of Rudolph (Abstract; Figure 1; col. 1, line 8-col. 2,

line 8; col. 3, lines 1-24); and Fintel (Figure 2; Figure 4; col. 1, lines 11-23; col. 4, lines 3-48) individually teach processes for controlling the color of extruded materials.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the color control teachings found in either of Rudolph or Fintel with the method of Harmuth, for the purpose of providing a high quality powder coating material having the desired color while reducing production waste and costs. Additionally, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the color control teachings found in either of Rudolph or Fintel with the method of Harmuth, for the purpose of providing a high quality powder coating material having the desired color while reducing production waste and costs. As to claim 18, Harmuth teaches the method as set forth above. Harmuth also discloses forming powdered coating compositions, plural (col. 1, lines 6-11), determining a suitable pigment-binder/resin ratio (col. 1, lines 55-60), and discloses examples of suitable pigments (col. 3, lines 25-30), and exemplifies a control sample and an inventive sample employing the same base material (col. 5, lines 26-col. 6, lines 42). Harmuth does not expressly teach repeating the steps as claimed. However, the suggestion and implication of Harmuth as outlined above is that various thermosetting powder coatings may be formed as desired to produce a variety of viable products of varying colors as is routinely practiced in the art.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have repeated the steps as claimed while practicing the method of Harmuth to produce a variety of powder coating compositions having different colors with the same base material.

As to claim 19, Harmuth discloses the pigments are similar to those used in conventional coatings and exemplifies the formation of one suitable liquid pigment dispersion (col. 4, lines 3-

34). Furthermore, Dietz et al. (Abstract; col. 1, lines 39-48; col. 8, lines 15-68; col. 10, lines 12-14) and Vanier et al. (paragraph [0027]) disclose small particle size pigments suitable for employment in powder coating applications that are formed from liquids and then used as pigments in processes for forming powdered coatings.

Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harmuth (US 4,320,048) in view of either of Vanier et al. (US 20030125417) or Dietz et al. (US 6,537,364), and in view of either of Rudolph (US 4,684,488) or Fintel (US 4,919,872), as applied to claims 17-19 above, and further in view of Chang et al. (US 4,973,439).

As to claims 23 and 24, Harmuth meters the pigment dispersion into the extruder (col. 1, line 5-col. 2, line 50; col. 5, line 18-21). The metering of the pigment dispersion into the extruder as disclosed by Harmuth suggests and implies the liquid is injected. However, additionally, Chang et al. teach a method of introducing liquid mixture into an extruder wherein the liquid is injected (Figures 1 and 2).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have metered the pigment dispersion disclosed in the method of Harmuth by injecting the pigment dispersion and liquid material as suggested by Chang et al., since Chang et al. suggests injection is an art recognized equivalent means for introducing liquids into an extruder.

Further it is submitted that the pigment dispersion employed by Harmuth is implicitly fed from some vessel and that this vessel is reasonably understood to be a low-pressure vessel. It is also implicit that the pressure vessel is connected to a source of pressurization, such as atmospheric air or a nitrogen source, in order to effectively feed the metering device (i.e. net positive suction head to the pump). Further still, the pressure vessel would have implicitly and

routinely contained a mechanism, such as a relief valve, rupture disk and/or a vacuum relief, for maintaining the pressure in the vessel to a desired value to ensure the vessel does not collapse or burst. The examiner notes that one having ordinary skill would have been motivated to control the pressure as low as possible for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor emissions while ensuring the metering device was adequately fed and would have been motivated to employ a mechanism as claimed to prevent the vessel from collapsing or bursting. Furthermore, it is the examiner's position that any of the claimed structural limitations not implicit or intrinsic within the Harmuth reference do not affect the step-wise completion of the process in a manipulative sense.

(10) Response to Argument

Appellant's argument essentially alleges that the Examiner has not established a *prima facie* case of obviousness because the references fail to teach or suggest each and every limitation of the claims. The examiner disagrees with the argument and submits that a *prima facie* case of obviousness has been properly set forth.

As an initial matter, for the sake of clarity, the examiner notes that appellants arguments directed to the rejections of claims 1, 3-7, and 9; claim 2; and claims 7 and 8, are listed under three separate headings (i.e. headings 1, 2 and 3) in Section VI of the brief, but are argued under heading 1, with subheadings, in Section VII of the brief. Additionally, for the sake of clarity, the examiner notes two terms in the claims that appellant has defined in the original disclosure: "hard to incorporate additives" and "hyperdispersed pigment". The term "hard to incorporate additives" and "hyperdispersed pigment" are defined at paragraphs [0008] and [0009], respectively, of US 2005/0212159, the published disclosure of the instant application.

Regarding claim 1, appellant argues that Harmuth and Chang teach away from the low operating pressure of the present invention. Specifically, appellant argues, and declares in the 37 CFR 1.132 declaration of inventor Joseph M. Ferencz, that the invention claims a low-pressure extrusion process not suggested or implied by the combination of Harmuth and Chang since the processes of Harmuth and Chang must be conducted at a pressure well above 100 psi due to the utilization of a volatile dispersing liquid. This argument is not persuasive. Initially, the examiner notes that the argued limitation in the claims is not directed to the extrusion pressure, but is directed to the pressure in the pressure vessel that feeds the claimed additive to the extruder. The examiner notes and submits that the extrusion pressure and the pressure in the pressure vessel are different and not even necessarily related pressures. Accordingly, appellant's arguments are not commensurate in scope with the claims. Further, the examiner does not dispute that the process of Harmuth employs a "volatile dispersing fluid" or that the extruder of Harmuth has a devolatilization zone. For example, Harmuth exemplifies the use of toluene as a dispersing fluid (col. 5, lines 55-60). The examiner notes that the vapor pressure of toluene at 25 °C (i.e. ambient temperature) is about 0.5 psi. Additionally, during the extrusion process set forth by Harmuth, the highest temperature exemplified in the extruder is 150 °C (col. 6, line 21). The vapor pressure of toluene at 150 °C is about 40 psi. Accordingly, in view of what the claim actually recites, the examiner submits one having ordinary skill would have stored the pigment/additive mixture of Harmuth, that includes toluene, at a pressure somewhat higher than the ambient vapor pressure of the toluene (e.g. 0.5 psi), but would in no way be required or even inclined to store the material at a pressure greater than 100 psi as argued. Further, for the sake of argument, taking appellant's arguments on their face, which for the reasons set forth above are not commensurate in scope with the claims, even should the claim recite that the pressure in the extruder was less than 100 psi (which it does not), the examiner

notes that the pressure in the extruder would only need to be above 40 psi to keep the toluene from vaporizing in the extruder prior to reaching the devolatilization zone. Additionally, the examiner notes that Chang et al. employ a pump (63) for injecting the liquid additive into the extruder. As such, it is the pump that needs to overcome the pressure in the extruder, not the pressure vessel feeding the additive/pigment.

Further, the examiner maintains that the pigment dispersion employed by Harmuth is implicitly (if not inherently) fed from some vessel and that this vessel is very reasonably understood to be a pressure vessel. The examiner notes that one having ordinary skill would have been motivated to control the pressure in the vessel storing the additive/pigment as low as possible for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor emissions while ensuring the metering/injecting device was adequately fed (i.e. net positive suction head required to avoid pump cavitation) as is routinely practiced in the art. As such, one having ordinary skill would have only maintained the pressure in the pressure vessel at approximately 0.5 psi plus any head loss between the outlet of the vessel and the inlet of the pump to ensure the pump was adequately fed without causing cavitation as a general engineering principle.

Accordingly, for all of these reasons, the examiner submits that it would have been obvious to one having ordinary skill at the time of the claimed invention to have maintained the pressure vessel that feeds the additive to the extruder at a pressure of less than 100 psi as set forth in the combination.

Regarding claim 2, appellant argues that nothing in Rudolph or Fintel suggests or implies a method for the dynamic control by the downstream addition of hard to incorporate additives. This argument is not persuasive. The examiner notes, for the sake of clarity, that the "hard to incorporate additive" set forth in the rejection of claim 1 and claim 2 is a pigment and

further notes that pigments are defined as being "hard to incorporate additives" in the instant application. Appellant argues that Rudolph relates exclusively to incorporation of additives to the hopper located at the extruder inlet and as such does not meet the claim. This argument is not persuasive. The examiner notes that the argued limitation is met by Harmuth. Rudolph is applied for the teaching of dynamically controlling the color of extruded materials. In combination, the examiner submits the claim is clearly met by the combination of Harmuth in view of Chang and Rudolph with Rudolph providing the teaching of dynamically controlling the color in an extrusion process. Appellant further argues that Fintel, used in the alternative in the rejection, discloses a process of adding colorant at an inlet point adjacent or upstream of the base material. As an initial matter in this regard, the examiner notes that in Figure 4 and Figure 5, Fintel adds color (104) at a position that is "after the base material enters the extruder" as set forth in claim 1. As such, the argument is not persuasive. However, Fintel was not applied for this teaching since the argued teaching is provided by Harmuth, but like Rudolph, Fintel was applied for the teaching directed to dynamic process control.

Regarding claim 5, appellant argues that Harmuth does not suggest or imply the production of various thermosetting powder compositions from a common base material. This argument is not persuasive. The examiner notes that Harmuth teaches the amount of pigment is chosen relative to the amount of the thermosetting resin/binder to produce the desired product (col. 5, lines 18-21). Additionally, Harmuth teaches optional additives may be employed (col. 2, lines 46-51; col. 3, lines 30-36) and provides a list of various pigments (col. 3, lines 25-29). As such, the examiner submits that the clear suggestion in Harmuth is to utilize the process, as desired, to produce a variety of powder coating compositions that can vary in color or optional additive amounts while still utilizing the same base material.

Regarding claims 7 and 8, appellant argues that neither Rathschlag nor Dietz account for the failure of Harmuth to operate at a pressure below 100 psi. This argument is not persuasive. For the reasons set forth above, the examiner submits that the rejection of claim 1 based upon Harmuth in view of Chang et al. presents a *prima facie* case.

Regarding claim 9, appellant argues that Harmuth does not teach the hard to incorporate additive comprises one or more "flow additives" because the "flow control additives such as silicone resins" of Harmuth are not added after the base material as required. This argument is not persuasive. The examiner submits that the limitation "flow additive" does not limit the claim to the silicone resin set forth by Harmuth as a "flow control additive". The examiner submits that the toluene and the dispersant employed with the pigment of Harmuth (col. 5, lines 55-61) are also reasonably interpreted to be "flow additives" as set forth in the claim. In particular, the examiner submits that the liquid toluene of Harmuth clearly facilitates the "flow" of the powdered pigments of Harmuth.

Regarding the rejection of claim 13, appellant argues that the addition of a dried liquid dispersion to a resinous base material in the production of a thermosetting powder coating composition is not suggested or implied by the prior art of record. This argument is not persuasive. The examiner disagrees with the characterization provided by appellant regarding the scope of claim 13. In particular, the examiner disagrees that claim 13 requires the pigment be "a dried liquid pigment dispersion" in all embodiments set forth in the claim. As set forth in the claim, the hyperdispersed pigments are added "either separately from the base material or with the base materials, and when added with the base materials, the hyperdispersed pigment(s) are in the form of a dried liquid pigment dispersion..." (emphasis added by the examiner). In the rejection of record, the examiner employed the Harmuth reference as the primary reference which adds the pigment separately from the base material. As such, the

examiner submits that the scope of the claim, in this embodiment, does not require utilizing a "dried liquid pigment dispersion" since that limitation is only required when the pigment is "added with the base material" and the rejection set forth by the examiner is feeding the pigment "separately from the base material".

Appellant further argues that neither Vanier nor Dietz employ a "hyperdispersed pigment" since neither reference teaches an additional dispersion step. This argument is not persuasive. The examiner notes that the definition set forth in the original disclosure is that the pigment is subjected to additional grinding "and/or" dispersion steps. As such, the examiner submits that the dispersion step is not even required for the pigment to be considered "hyperdispersed" within the plain meaning of the word "or". As appellant appears to agree that Vanier performs an additional grinding step, the examiner submits the argument has been properly addressed. Further, the examiner notes that both Vanier and Dietz employ a pigment having a size of less than 2.0 microns which is the required size to be considered a hyperdispersed pigment in the instant application.

Regarding claim 14, appellant argues that neither Rudolph nor Fintel account for the failure of the rejection of claim 13. This argument is not persuasive. For the reasons set forth above the examiner submits that the rejection of claim 13 is proper.

Regarding claim 15, appellant argues that for the same reasons set forth in the argument against the rejection of claim 5, Harmuth does not suggest or imply forming additional thermosetting powder coating compositions from the same base material. This argument is not persuasive for the same reasons set forth above in addressing the arguments against the rejection of claim 5.

Regarding claim 21, appellant argues that the method of Chang does not account for the failure of Harmuth, Vanier, or Dietz to provide a reason for using the claimed hyperdispersed

pigments. This argument is not persuasive. The examiner submits Chang was not applied for teaching hyperdispersed pigments. Vanier and Dietz, in the alternative, were set forth for their teaching of hyperdispersed pigments and are still proper for the reasons set forth above in addressing claim 13.

Regarding claim 22, appellant argues that nothing suggests the incorporation of hyperdispersed pigments at an operating pressure of below 100 psi. This argument is not persuasive. For the same reasons set forth above in response to the arguments directed against the rejection of claim 1, the examiner maintains Harmuth and Chang meet the argued limitation.

Regarding claim 17, appellant argues that nothing in the prior art suggests dynamic color control of an extrusion process that dynamically adjusts the amount of hyperdispersed dried pigments added to the base material. This argument is not persuasive. For the same reasons set forth above in addressing claim 13, the examiner submits that the scope of claim 17 does not require the pigment be added to the extruder in a "dried liquid pigment dispersion" in all embodiments. The examiner has employed an alternative embodiment, clearly set forth in the claim, where the pigment is added after "the base material travels through a portion of the extruder". Accordingly, the examiner submits appellant's arguments are not commensurate in scope with the claims.

Regarding claim 18, appellant argues that for the same reasons set forth in the argument against the rejection of claim 5, Harmuth does not suggest or imply forming additional thermosetting powder coating compositions from the same base material. This argument is not persuasive for the same reasons set forth above in addressing the argument against claim 5.

Regarding claim 24, appellant argues that nothing in the prior art teaches or suggests an extrusion process for producing a thermosetting powder composition which operates at a

pressure below 100 psi, uses dried hyperdispersed pigments, and achieves dynamic color control. This argument is not persuasive. Again, as an initial matter, the claim does not require "dried liquid pigment dispersions" as set forth above. Additionally, for the same reasons set forth above in responding to the arguments against the rejection of claim 1, the examiner submits that Harmuth and Chang teach and suggest the "below 100 psi" limitation as argued. Additionally, for the same reasons set forth above in responding to the arguments against the rejection of claim 13, the examiner submits Vanier or Dietz both individually meet the argued "hyperdispersed pigment" limitation. Appellant argues that the combined teaching of the references would not provide one with a reason to dynamically control the composition as claimed. This argument is not persuasive. As set forth above in responding to the arguments against the rejection of claim 2, both Fintel and Rudolph, presented in the alternative, provide the teaching and suggesting to dynamically control the color in Harmuth's process.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jeff Wollschlager/
Examiner, Art Unit 1791

Conferees:

/Jennifer Michener/

QAS, TC1700

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791